

FIG. 1

Donald L. Stephens, Jr.
Our Ref. No. 4630-59094/DLS/JOC
Inventors: Croteau et al.
For: TRANSACYLASES OF THE PACLITAXEL
BIOSYNTHETIC PATHWAY
Application No. 09/866,570, filed: May 25, 2001
Mailed: September 20, 2001
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Tryptic Peptide Fragment

Peptide Sequence

SEQ ID NO: 29	TTLQLSSIDNLPGVR
SEQ ID NO: 30	ILVYYPPFAGR
SEQ ID NO: 31	FTCGGFVVGVSF
SEQ ID NO: 32	KGLAEIARGEVK
SEQ ID NO: 33	NLPNDTNPSSGYYGN

FIG. 2

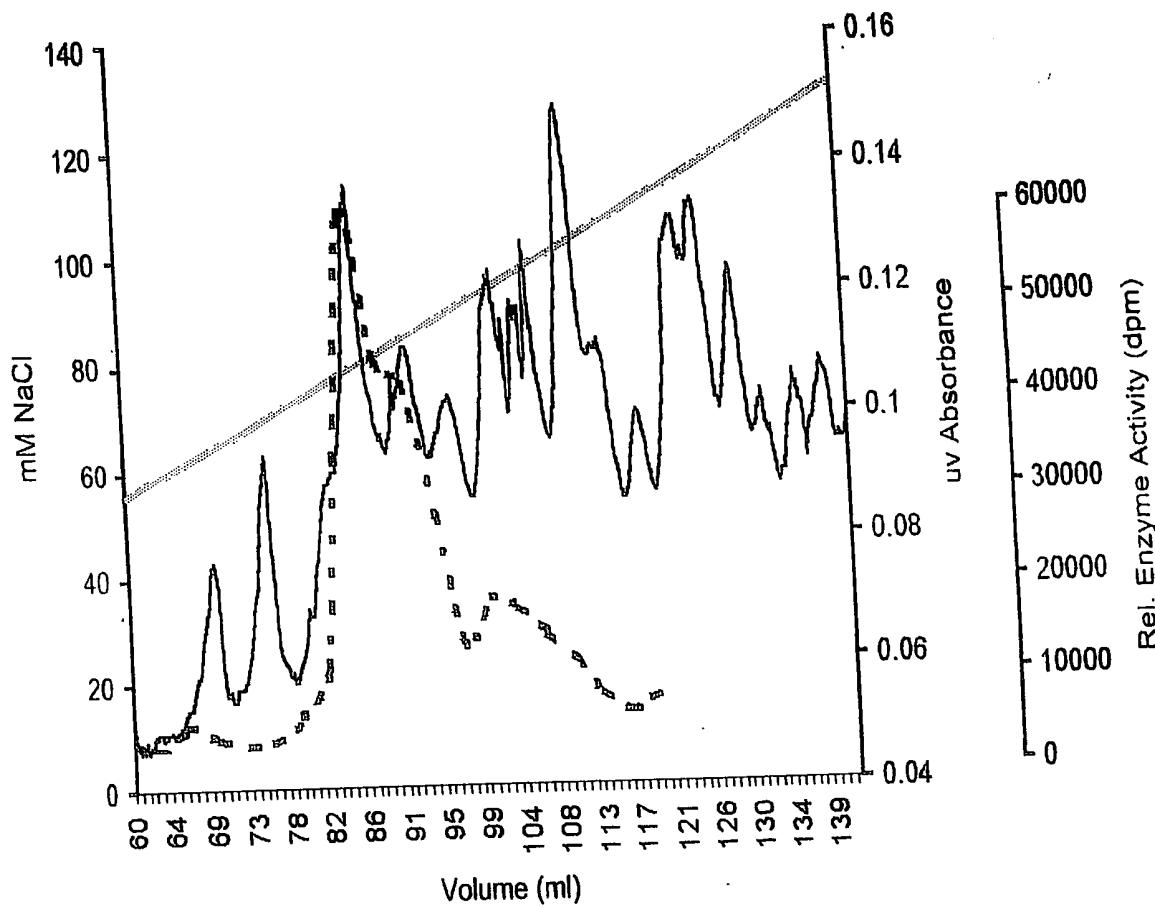


FIG. 3A

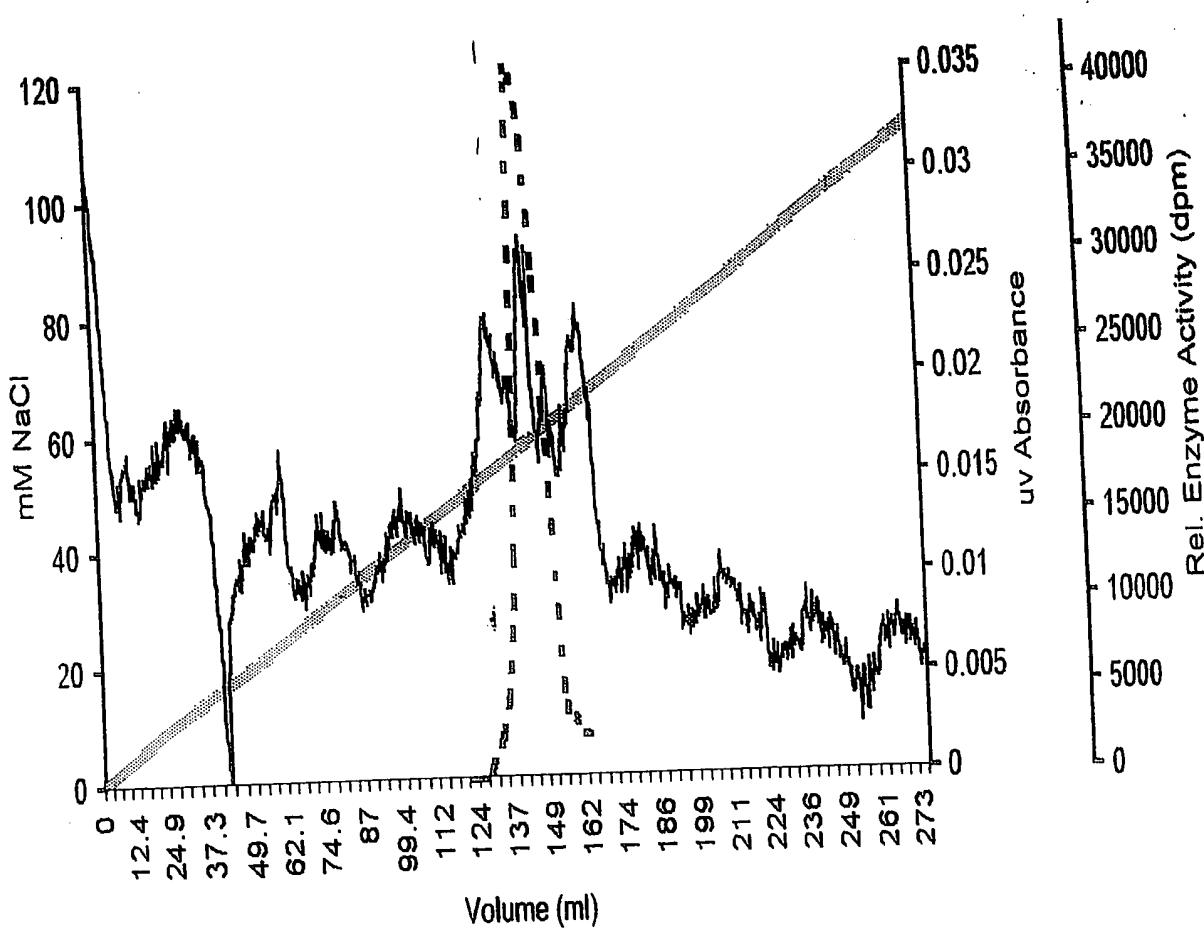


FIG. 3B

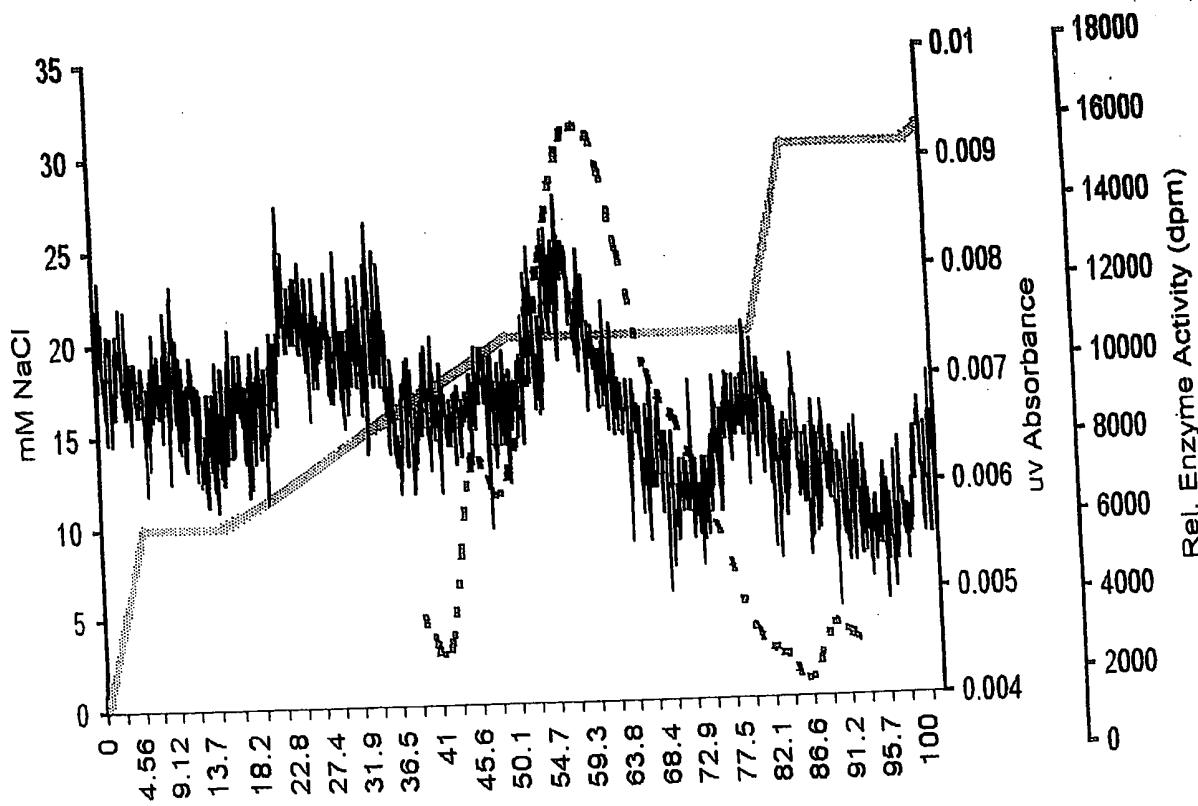


FIG. 3C

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kDa
96 —

55 — [REDACTED]

45 — [REDACTED]

FIG. 3D

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FROM PEPTIDE FRAGMENT SEQUENCE 2

NH2-	I	L	V	Y	Y	P	P	-COOH
5'	ATI	CTI	GTI	TAT	TAT	CCI	CC	3'
	T	C	C	C	C	C		
	A				A			

AT-FOR1
 (SEQ ID NO: 34)

NH2-	Y	Y	P	P	F	A	G	-COOH
5'	TAT	TAT	CCI	CCI	TTT	GCI	GG	3'
	C	C	C	C	C	C		
	A	A			A			

AT-FOR2
 (SEQ ID NO: 35)

FROM SEQUENCE HOMOLOGY CONSIDERATIONS

NH2-	F	Y	P	F	A	G	R	-COOH
5'	TTC	TAT	CCI	TTC	GCI	GGI	AG	3'
	T	C		T	C	C		
	A	A			A	C		

AT-FOR3
 (SEQ ID NO: 36)

NH2-	Y	Y	P	L	A	G	R	-COOH
5'	TAC	TAT	CCI	TTI	GCI	GGI	AG	3'
	T	C		C	C	C	C	
	A	A			A	A		

AT-FOR4
 (SEQ ID NO: 37)

NH2-	D	F	G	W	G	K	P	-COOH
3'	CTA	AAA	CCI	ACC	CCI	TTT	GG	5'
	G	G	C		C	C		
			A		A			

AT-REV1
 (SEQ ID NO: 38)

FIG. 4

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Y092602 02599260

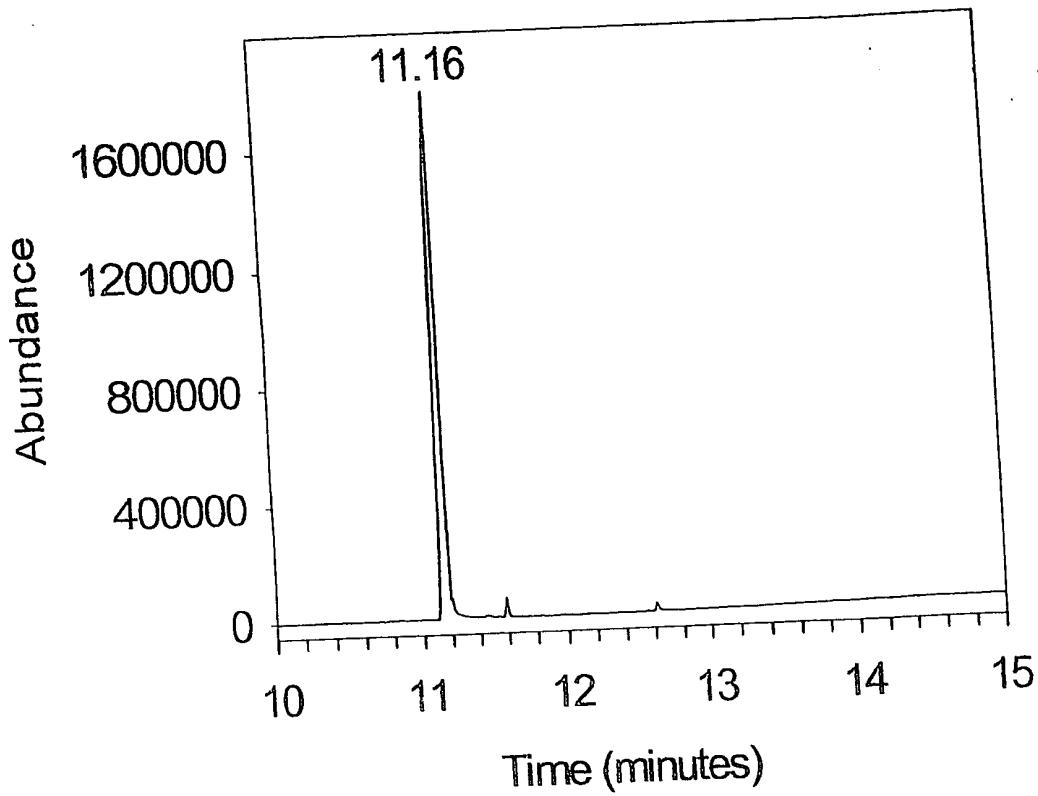


FIG. 5A

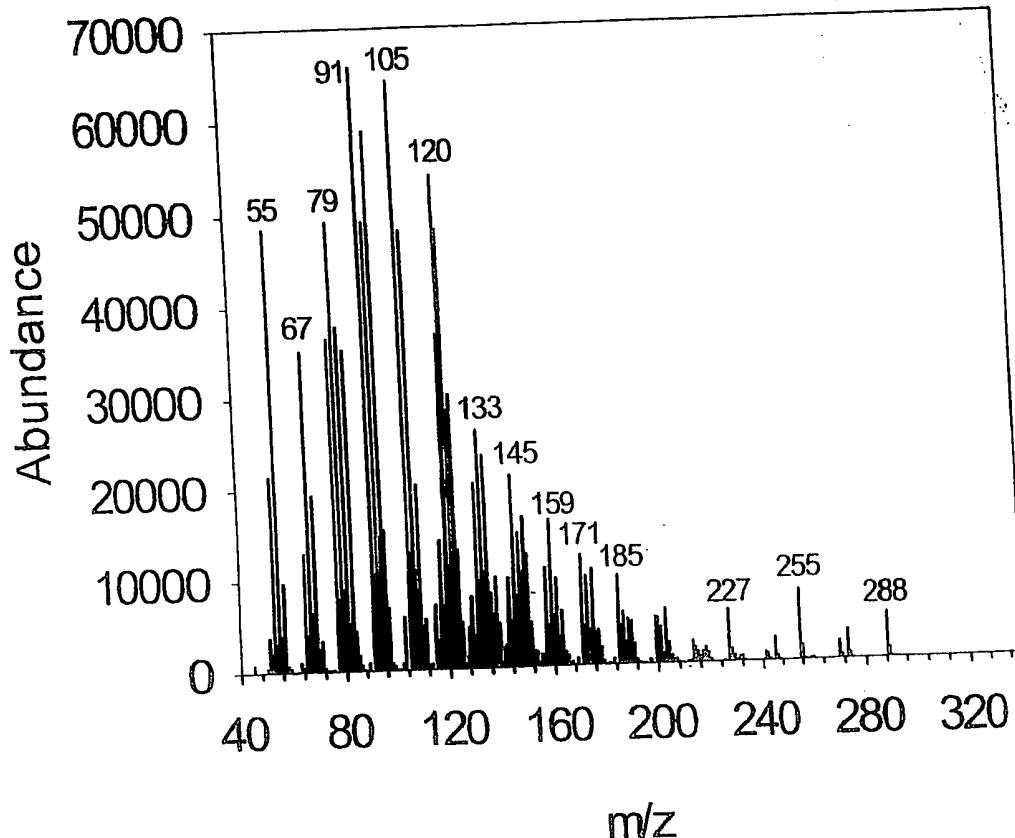


FIG. 5B

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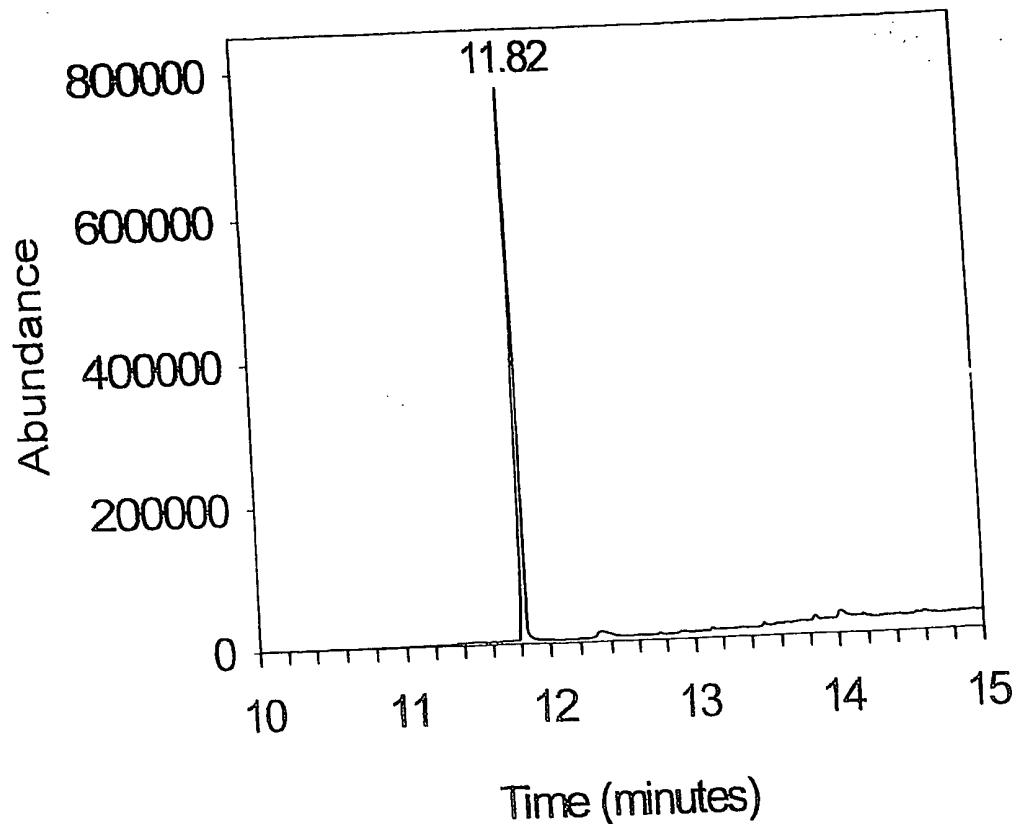


FIG. 5C

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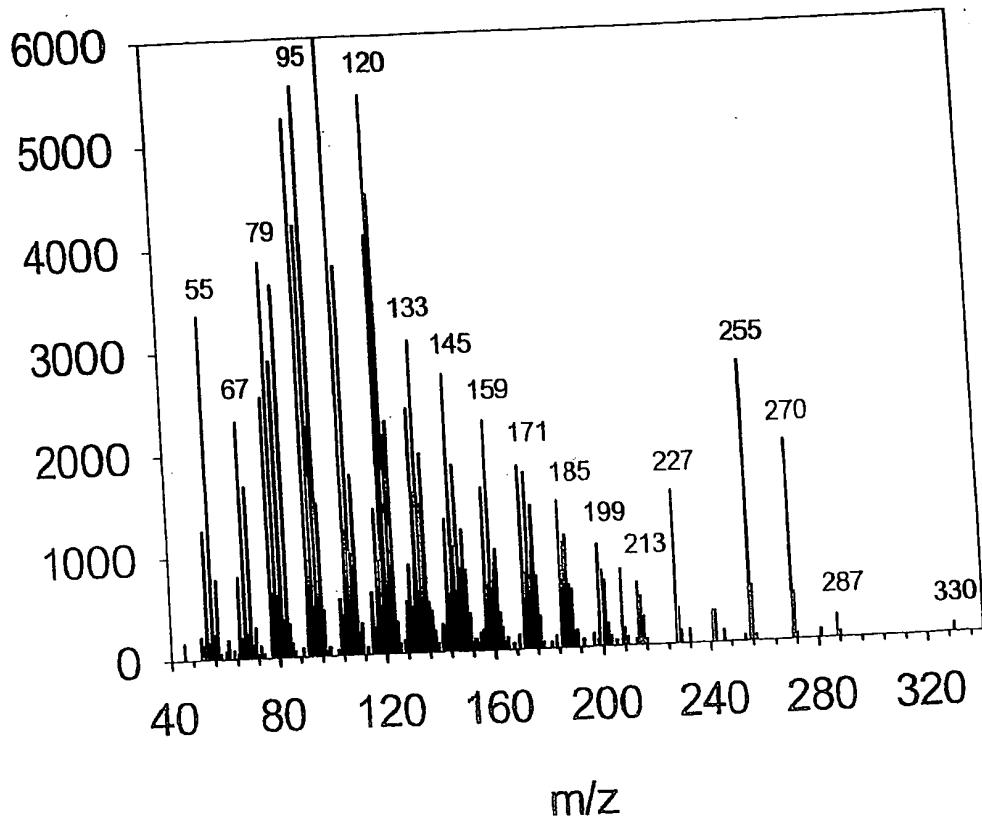


FIG. 5D

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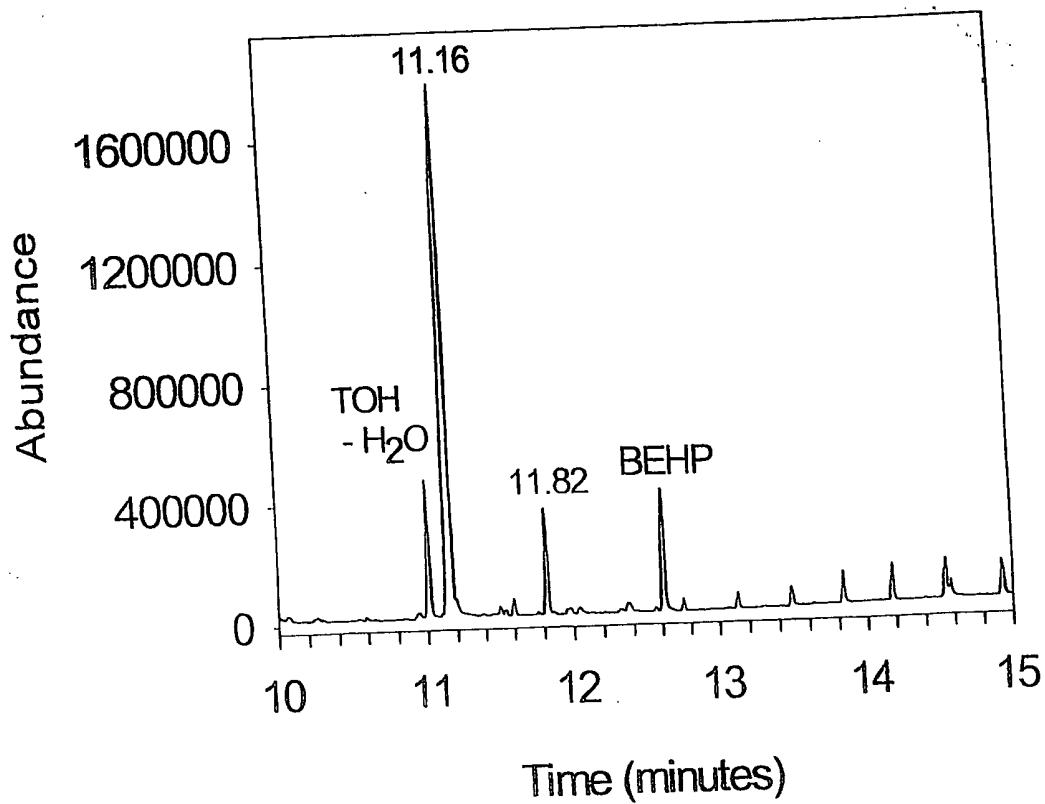


FIG. 5E

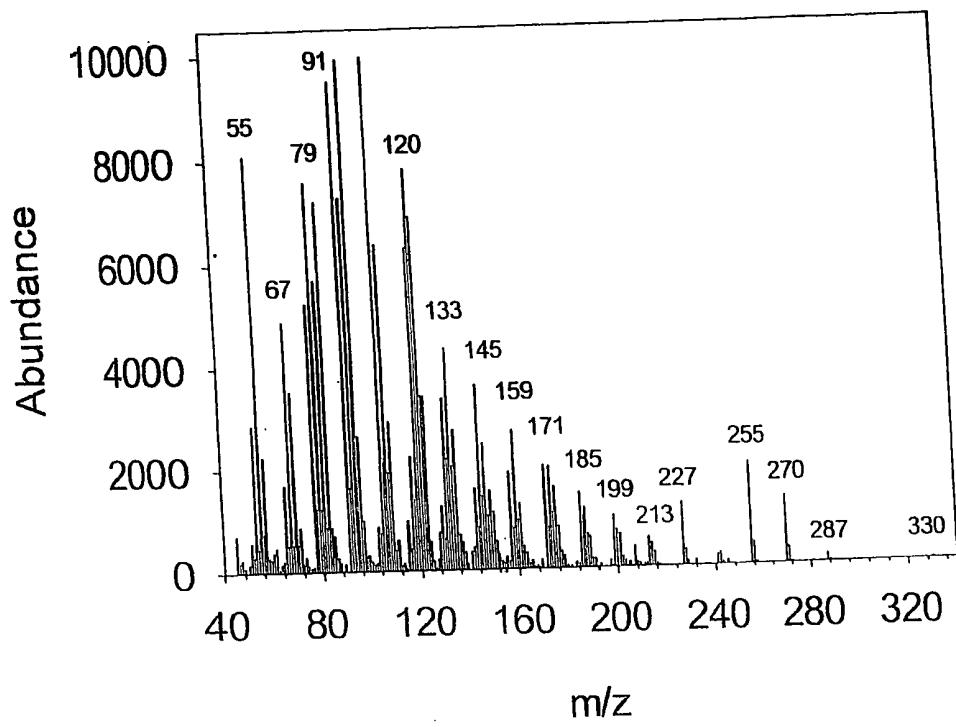


FIG. 5F

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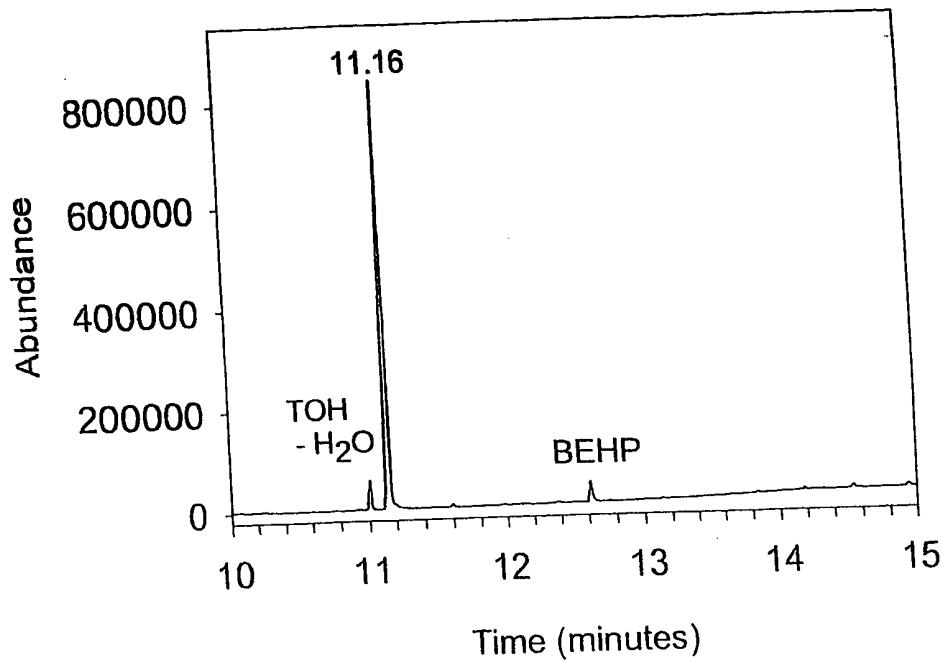


FIG. 5G

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TAX1 (SEQ ID NO: 28)
TAX2 (SEQ ID NO: 26)
aab61522 (SEQ ID NO: 61)
aab61523 (SEQ ID NO: 62)
aab95293 (SEQ ID NO: 63)
aab97723 (SEQ ID NO: 64)
aac17079 (SEQ ID NO: 65) MAAVSVASAELPPPPQDGETLSNPVPTQLSGEDCKKQRIQRPKSKNAEKCT 50
aac18062 (SEQ ID NO: 66)
aac27152 (SEQ ID NO: 67)
aac99311 (SEQ ID NO: 68)
aad12025 (SEQ ID NO: 69)
caa20531 (SEQ ID NO: 70)
caa64636 (SEQ ID NO: 71)
caa94432 (SEQ ID NO: 72)
cab06427 (SEQ ID NO: 73)
cab10318 (SEQ ID NO: 74)
cab10319 (SEQ ID NO: 75)
cab40761 (SEQ ID NO: 76)

FIG. 6A

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TAX1 (SEQ ID NO: 28)
TAX2 (SEQ ID NO: 26)
aab61522 (SEQ ID NO: 61)
aab61523 (SEQ ID NO: 62)
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aab97723 (SEQ ID NO: 64)
aac17079 (SEQ ID NO: 65) V K C V N T C I R S G D G E G P I N I R R F Q R I A W Q I E G I Q V T V S C F F V T C G K T R S S S 100
aac18062 (SEQ ID NO: 66)
aac27152 (SEQ ID NO: 67)
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aad12025 (SEQ ID NO: 69)
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caa64636 (SEQ ID NO: 71)
caa94432 (SEQ ID NO: 72)
cab06427 (SEQ ID NO: 73)
cab10318 (SEQ ID NO: 74)
cab10319 (SEQ ID NO: 75)
cab40761 (SEQ ID NO: 76)

FIG. 6B

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TAX1 (SEQ ID NO: 28)	MEKTDLHYNLLIEKVMMVGPSPEL	23
TAX2 (SEQ ID NO: 26)	MGRFNYDMIERVIVAPCLQSQ	21
aab61522 (SEQ ID NO: 61)	MEKNYEILSREIVKEPSSPEZ	0
aab61523 (SEQ ID NO: 62)	MPSLEKSVTIISRNRRVFPDQKST	22
aab95293 (SEQ ID NO: 63)	MASCIQELHFTHLHIPYTINQQFLVHPSSPEZPANQSP	25
aab97723 (SEQ ID NO: 64)	WNYTMHSKKLLKPSIIZP	37
aac17079 (SEQ ID NO: 65)	NNPHHTTFFILSENNNQMGAEAAEQARGFHVTTRQVITAALPLO	DH 147	
aac18062 (SEQ ID NO: 66)	MGSSYQESPPLLEDLKVTIRESTLIFPSEEZ	20
aac27152 (SEQ ID NO: 67)	MESSGKISVETETLSKTLIKPSSPEZ	27
aac99311 (SEQ ID NO: 68)	MAPITFRKSYTIVPAEZ	20
aad12025 (SEQ ID NO: 69)	MANQRKPILPILLEKKPVELVKPSKHHC	34
caa20531 (SEQ ID NO: 70)	MDSKQSSSELVFTYRQKPELIAPAKEZ	29
caa64636 (SEQ ID NO: 71)	DFSFHVRKCOPELIAZANEZ	28
caa94432 (SEQ ID NO: 72)	MSIQIKOSTMVRPAEEZ	21
cab06427 (SEQ ID NO: 73)	METMTMKYETISKEIIKEPSSPEZ	19
cab10318 (SEQ ID NO: 74)	MEAKEYTGKEVIKPASPEZ	25
cab10319 (SEQ ID NO: 75)	R D 22	
cab40761 (SEQ ID NO: 76)	M P M L M A T R I D I I Q K L N V Y P R F Q N	23

FIG. 6C

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FIG. 6D

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TAX1 (SEQ ID NO: 28) R E A L A K I L V Y Y P P E F A G R L . R E T E N G D L E V E C T G E . G A M F L E & M A D N E L S V 114
TAX2 (SEQ ID NO: 26) R E A L S K V I V V Y Y P P E F A G R L . R N T E N G D L E V E C T G E . G A V F V E & M A D N D E S V 108
aab61522 (SEQ ID NO: 61) M S Q 3
aab61523 (SEQ ID NO: 62) K K S L S K T L P I F Y P L A G R I L . G S F V E C N D E G A V F I E A R V D H . L L S E 108
aab95293 (SEQ ID NO: 63) K H S L S I T I T H F P P L A G R L S . T S S S C H V E L T C N D A G A D F V E A Q A K S I H V S D 111
aab97723 (SEQ ID NO: 64) Q D A L S E V L V P Y Y P L S G R L . R E V E N G K L E V F F E E Q G V I L M V S A N S S M D L A D 125
aac17079 (SEQ ID NO: 65) K T A L A E T L V S Y Y A E A G E L V . T N P T G E P E I L C N N R G V D F V E A G A D . V E L R E 232
aac18062 (SEQ ID NO: 66) E S S L S E T L T L Y X H V A G R Y N . G T . . . D C V I E C N D Q Q G I G Y V E T A F D . V E L H Q 103
aac27152 (SEQ ID NO: 67) R K A L V K L M D A Y E F L A G R L R V D P S S G R L D V D C N G A . G A G F V T A A S D Y T L E E 121
aac99311 (SEQ ID NO: 68) Q N S L S E K T L V S Y Y P E F A G K V V . K N . . . D Y . I H C N D D G I E F F E V R I . R C R M N D 110
aad12025 (SEQ ID NO: 69) K T S L S R V L V H F Y Y P M A G R I R . W L P . R G R F E L N C N A E . G V E F F I E & S E G K L S D 106
caa20531 (SEQ ID NO: 70) R K A L S E L V H Y Y P L S G K L M R S E S N G K L Q L V Y L G E . G V P F E V A T S T L D I S S 116
caa64636 (SEQ ID NO: 71) K K A I A E T L V F Y Y P E F A G R L . R E G N G R K L M V D C T G E . G I M F V E & D A D V T L E Q 116
caa94432 (SEQ ID NO: 72) K E A I G K A L V F Y Y P L S G R I L . R E G P G R K L E V E C T G E . G I L F I E & D A D V S L E E 109
cab06427 (SEQ ID NO: 73) I E A L S K A L V P F Y Y P M A G R L K . I N . G D R Y E I I D C N A E . G A L F V E & E S S H V L E D 114
cab10318 (SEQ ID NO: 74) K T S L S E T L T K Y Y P L A G R I T . G V T V D C T D E G A I F V D A R V N N C P L T E 108
cab10319 (SEQ ID NO: 75) K L S L S E T L S R F Y Y P L A G R I E . G L S I S C N D E G A V F T E A R T D L . L L P D 101
cab40761 (SEQ ID NO: 76) K L G L E E T M S V W Y P A A G R I G L D G G G C K L N I R C N D G G A V M V E A V A T G V K L S E 114

FIG. 6E

TAX1 (SEQ ID NO: 28) LGD . FDDSNPSFQ . QLLESLPLDTNE KDLSELLVQYERETCG . GE 156
TAX2 (SEQ ID NO: 26) LQD . FNEYDPSSFQ . QLVFNLRDVNI EDLHLLTVQYERETCG . GE 150
aab61522 (SEQ ID NO: 61) TLEN . PNPN . ELNKLHPEFEVSDVP ELLVQYERETCG . GL 41
aab61523 (SEQ ID NO: 62) FLKC . PVPE . SLELLIP . . . VEAKSRE . . . AVTWEVLLQANPESCG . GL 149
aab95293 (SEQ ID NO: 63) VIAGIDVVPD . VVKEFFTYDR . AVSYE . . . GHNRPIIAVQYEEIN . . . DGY 153
aab97723 (SEQ ID NO: 64) LGDLTVPNPAWLPLIERNPGEAYKI . . . LEMPILLIAQVYETTCG . GE 169
aac17079 (SEQ ID NO: 65) LNLY . DPDE . SIAKLVPIKKHG VIAIQYQJLKCG . SI 266
aac18062 (SEQ ID NO: 66) FLLG . EESN . NLDDLVLVGL . . . SGFLSE . . . TETPELAQILNMVKCG . GL 144
aac27152 (SEQ ID NO: 67) LGD . LVYPNPAFAQQLVTSQLO . SLPKD . . . DOZLFLVFQITSEKCG . GE 163
aac99311 (SEQ ID NO: 68) ILKY . ELRS . YARDLVLPKRVTVGSED . . . TTA . . . IVQLSHEDCG . GL 150
aad12025 (SEQ ID NO: 69) FKD . FS . PTPEFENLM . PQVNYYKNPIE . . . TIEPLFLAQVYKEKCG . GI 147
caa20531 (SEQ ID NO: 70) LN . . . YIENLDDQVALRLVPEIEIDYESNVCVYHPALQYKKEAGG . GE 160
caa64636 (SEQ ID NO: 71) FGDELQPPFCLE . ELLYDVPDSAGV LNCPELLLIQYTRIRCG . GE 159
caa94432 (SEQ ID NO: 72) FWDTLPYSLSSMQNNIIHNALNSDEV LNSPALLLIQYTRIRCG . GE 153
cab06427 (SEQ ID NO: 73) FGD . FR . PNDDELHRVMVPTCDYSKGIS SFPEAMVQLTRIRCG . GV 156
cab10318 (SEQ ID NO: 74) FLKC . PDFD . ALQQQLPLDVVDNPYVA . . . AATWEPLLVLVKATYYEGCG . GM 152
cab10319 (SEQ ID NO: 75) FLRN . LNTD . SLSGFLPTLAAAGE . . . S . . . PAAWEPLLSSVSKYTFEGSGSGV 143
cab40761 (SEQ ID NO: 76) LGDLTQYNEFYENLVYKPSLDGDFSV MELVVAQYERAGG . GY 156

FIG. 6F

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TAX1 (SEQ ID NO: 28) VGVSEHHGVCDGRGAAQELKGGLAEMAR . GEVKLS LEPIW 195
TAX2 (SEQ ID NO: 26) VGTTRFHSVSDGKGGIGQLLKGGMEMAR . GEFKPS LEPIW 189
aab61522 (SEQ ID NO: 61) ALIGIGLSSHKLCDCALSGLIEVNNSWAAFAARGQTD ITPESF 80
aab61523 (SEQ ID NO: 62) VITICVSSEKITDATSLAMEIRGWAESSRG . . L GITLIESF 187
aab95293 (SEQ ID NO: 63) FIGCSVNHEAVTDGTSLWNFIINTFEEVSSRGAKNV RQPDDFTRESVL 198
aab97723 (SEQ ID NO: 64) SLGIRLCHCICDGFGAMQELGSWAATAKTKKLIA PEPVW 209
aac17079 (SEQ ID NO: 65) VEGCTFDERRVADAYSMNNMELLSWAAEISRSDVPI SCV . . ESE 305
aac18062 (SEQ ID NO: 66) VIGAQFNHIIIGDMETMSTEMNSWAKACRVGIKE VAHETF 183
aac27152 (SEQ ID NO: 67) AMGISTNHETTFDELSEKTELNLASSLLH . . EKPLS TPECN 201
aac99311 (SEQ ID NO: 68) AVAFFISHEKVAADGGTIASEMMDWASACYLSSS HHVPTELL 191
aad12025 (SEQ ID NO: 69) SLSVNVSHAIVDGQSALHLISEWGRLLR TVZFL 185
caa20531 (SEQ ID NO: 70) TIGTALTHAVCDGYGAQIHALTEL . . AGKTEPS VKSVW 199
caa64636 (SEQ ID NO: 71) IFALRLNHTMSDAPGLVQEMTAVGEMAR . GGSAPS ILEPVW 198
caa94432 (SEQ ID NO: 72) IFGLCFNHTMADGGFGIVQEMKATAEIR . . GAFAPS ILEPVW 192
cab06427 (SEQ ID NO: 73) SIGFAQHHVCDCGMAHFEEENNNSWARIK . . GLLPA LEPVH 194
cab10318 (SEQ ID NO: 74) AIGICITHKIDAAASISTEIRSWAAATAGENDA AAMESEPF 193
cab10319 (SEQ ID NO: 75) AVSVSVSHKICDIASLVTVEKDKDTTAKGKS STIE . . F 181
cab40761 (SEQ ID NO: 76) SIGCTSSSLEDCISVETIWSNSHINKNSKTTNKEDVVIKPW 204

FIG. 6G

TAX1 (SEQ ID NO: 28) N&ELVKLD . . . DP . . KYLQFF~~E~~F . . EFLRAP SIV EKIVO 227
TAX2 (SEQ ID NO: 26) N&EMVKPE . . . DI . . MYLQFD~~H~~F . . DFHPP LNL EKSIO 221
aab61522 (SEQ ID NO: 61) DLAKMFP~~C~~DIE LN MATGITE NIVT 107
aab61523 (SEQ ID NO: 62) TASEVF~~P~~KPLDEL PSKPM~~D~~RKEEEVEMS . . CVT 218
aab95293 (SEQ ID NO: 63) ISPAVLKVPOGGPKVTDENAPL~~R~~E~~I~~FSRESIQLKAVVNKK 243
aab97723 (SEQ ID NO: 64) DRET~~F~~KPR . . NP . . PMVKY~~P~~H . . EYLPIEERSNLNSLWD TKPLO 249
aac17079 (SEQ ID NO: 65) RSSLNPRRPLVM~~D~~PSIDQIYMPVTS~~L~~PPQETTNPENLLAS 347
aac18062 (SEQ ID NO: 66) GLAPLMPSAKVLN 210
aac27152 (SEQ ID NO: 67) D~~T~~L~~L~~KARD~~D~~PPS VAFPH EL . . VKFQDCE~~T~~VFEATSEHLD~~F~~ 242
aac99311 (SEQ ID NO: 68) VSDS~~T~~IFP~~R~~DNII CEQEP~~T~~SK NCVE 216
aad12025 (SEQ ID NO: 69) D~~R~~KILWAGEPLP~~P~~FVSPPKF~~D~~~~H~~K . . EFDQPPFELIGETDNVEERKKKTIV . . 232
caa20531 (SEQ ID NO: 70) QBERLVGKIDNKP . . GKVP~~G~~SHI . . D GELATSAYLPT TDVV~~T~~ 237
caa64636 (SEQ ID NO: 71) CRELLNAR . . NP . . PQVTCT~~H~~ . . EYDEV~~R~~D~~T~~KGT~~I~~IP~~L~~ DD~~M~~VH 236
caa94432 (SEQ ID NO: 72) QRALLTAR . . DP . . PRITF~~R~~Y . . EYDQVVDMKSGLIP~~V~~ NSKID 230
cab06427 (SEQ ID NO: 73) D~~E~~Y~~L~~HLPRPN~~P~~QI KYS~~S~~S . . QFE . . P~~F~~VPSLPNELL~~D~~GKT~~N~~KSQ . . 235
cab10318 (SEQ ID NO: 74) AGANFY~~P~~PANEAF KLPADEQAGKRS . . SIT 221
cab10319 (SEQ ID NO: 75) AETTIY~~P~~PPPSHM YEQFPSTDS~~D~~SNITSKYVL 213
cab40761 (SEQ ID NO: 76) D~~R~~RNL~~L~~VNRDAVRETNAAAI~~C~~LYQ~~L~~IKQAMMTYQEQNRL~~E~~LPDSGFVI 256

FIG. 6H

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TAX1 (SEQ ID NO: 28) TYEIIDFETNYIKQSV.MEEC.....KEF 251
TAX2 (SEQ ID NO: 26) ASMVISFERINYIKRCM.MEEC.....KEF 245
aab61522 (SEQ ID NO: 61) RREVFLRSSVESLERFSGNK.....KIR.AT 133
aab61523 (SEQ ID NO: 62) KREVFDASKKKRAK.ASRN.....LVKNPT 244
aab95293 (SEQ ID NO: 63) KWLTVDNGEIDGVELLGKQSNDKLNGKENGILTEMLESILFGRNDAVSKPV 293
aab97723 (SEQ ID NO: 64) KCYRISKEFQCRVKSIA.QGED.....PTL 273
aac17079 (SEQ ID NO: 65) RIYYIKANALQEIQTLASSSKN.....GKRT 373
aac18062 (SEQ ID NO: 66) KREVFNENAAITRKRKEATEEDGGDD.....DQKKKRPS 244
aac27152 (SEQ ID NO: 67) KIEKLSSESEQKKERA..SET.....SNG 265
aac99311 (SEQ ID NO: 68) KTEIFPPEAZEKKKSAVEFG.....IEKPT 242
aad12025 (SEQ ID NO: 69) VMLPLSTSSQLQKRSKANGSKH.....SDP 257
caa20531 (SEQ ID NO: 70) ETINIRAGDIEKRLKDSM.MKEC.....EYL 261
caa64636 (SEQ ID NO: 71) KSEFFGPSEVSAARRFV.PHHL.....RK 259
caa94432 (SEQ ID NO: 72) QLEFFSQLQIQLRQTL.PAHL.....HD 253
cab06427 (SEQ ID NO: 73) TLEILSREQINTAKQKLDLSSNN.....TTR 260
cab10318 (SEQ ID NO: 74) KREVFEASKVEDLRTKAASEE.....TVDQPT 248
cab10319 (SEQ ID NO: 75) KREVFEPPSKIAELKKHAASES.....VPVPT 239
cab40761 (SEQ ID NO: 76) KTEELNGDAIESMKKKSSLEG..... 276

FIG. 6I

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TAX1 (SEQ ID NO: 28) . CS . . SEEVASAMTWIARTRAFQIPESEY V K I L F G M D M & N S F N 291
TAX2 (SEQ ID NO: 26) . FS . . A F E V V V A L I W L A R T K S E R I P P N E Y V K I I F P I D M & N S F D 285
aab61522 (SEQ ID NO: 61) RVE V L S V F I W S R F . . M A S T N H D D K T G K I Y T L I H P V N L R Q O A D 173
aab61523 (SEQ ID NO: 62) RVE A V T A L F V R C V . . T K V S R L S S L T P R T S V L Q I L V N L R G K V D 284
aab95293 (SEQ ID NO: 63) AVE . . I S S E Q S I C A L L W R A I T R A R K L P S S K T T F R M A V N C R H & L S 336
aab97723 (SEQ ID NO: 64) VCS . . T E D A M A A H I K R S W V K A L D V K P L D Y N L R L T E S Y N V A R T E L E 315
aac17079 (SEQ ID NO: 65) KLE S F S A F L W K L V A E H A A K D P V P I K T S K L G I V Y D G E R R L M 413
aac18062 (SEQ ID NO: 66) RVD L V T A F L S K S L I E M D C A K K E Q T K S R P S L M V H M M N L R & T K 286
aac27152 (SEQ ID NO: 67) N V R V T G F N V V T A L V W E R C K A L S V A A E G E E T . N L E R E S T I L Y A Y D I R G & L . 313
aac99311 (SEQ ID NO: 68) RVE V L T A F L S R C A T V A G K S A A K N N C G Q S L P F P V L Q A I N L R P I L E 287
aad12025 (SEQ ID NO: 69) A K G F T R Y E T V T G H V W E R C A C K A R G H S P E Q P T . A L G I C I D T & S E M . 299
caa20531 (SEQ ID NO: 70) K E S F T T Y E V L S S Y I W K L R S R A L K L N P D G I T V . L G V A Y G I R & H V L D 304
caa64636 (SEQ ID NO: 71) . C S . . T F E L L T A V L W E R C R T M S L K P D P E E V R A L C I Y N A R S E F N 299
caa9432 (SEQ ID NO: 72) . C P . . S F E V L T A V V W R L R T I A L Q F K P E E E V R F F L C V M N L R & S K I D 293
cab06427 (SEQ ID NO: 73) . . . L S T Y E V V A A H V W E S V S K A R G L S D H E E I . K L I M P Y D G E S E I N 300
cab10318 (SEQ ID NO: 74) RVE S V T A L I W K C F . . V A S S K . . T T T C D H K V L V Q L A N L R S K I P 286
cab10319 (SEQ ID NO: 75) RVE A I M S L I W R C A . . R N S S R S N L L I P R Q A V M W Q A M D I R L R I P 279
cab40761 (SEQ ID NO: 76) . F M C S S F E F L A A H L W K A R T R A L G I R R D A M V C L Q F A V D I R K R T E 318

FIG. 6J

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TAX1 (SEQ ID NO: 28) P . P_LE_PS G_ZY_ZG_NS I G T A C A V D N V Q D . . L L S G . S L L R A I M I K K S_XV S L . . 334
TAX2 (SEQ ID NO: 26) S . P_LE_PK G_ZY_ZG_NA I G N A C A M D N V K D . . L L N G . S L L Y A L M L I K K S_XF A L . . 328
aab61522 (SEQ ID NO: 61) P . D_I_ZD N M F G A N I M R E S V T V P M M I N . . E N D E E K A S L V D Q M R E E I R K I . . 217
aab61523 (SEQ ID NO: 62) S : . L C E N T I G N . M L S L M I . . L K N E . . A A I E R I Q D V V D E I R R A X E I F . . 324
aab95293 (SEQ ID NO: 63) P . K L N P E Y X F G N A I Q S V P T E A T A E V L S R D I K W C . . 368
aab97723 (SEQ ID NO: 64) T L K I R K G F Y G N V V C L A C A M S S V E S . . L I N D . S L S K T T R L V Q D A R L R V . . 359
aac17079 (SEQ ID NO: 65) E . K E N N T Y F G N V L S V P F G G Q R I D D L I S K P L S W V T E E V H R F L K . . 455
aac18062 (SEQ ID NO: 66) L . A L E N D V S G N F F I V V N A . . E S K I T V A P K I T D L T E S L G S A . . 323
aac27152 (SEQ ID NO: 67) N P E I L P P S Y T G N A V L T A Y A K E K C K A . . L L E E . P F G R I V E M V G E G S K R I . . 357
aac99311 (SEQ ID NO: 68) . . L P Q N S V G N L V S I Y E S R T I K E N D Y L N E K E Y T K L V I N E L R K E K Q K I . . 331
aad12025 (SEQ ID NO: 69) E P P I P R G Y F G N A T L D V V A A S T S G E . . L I S N . E L G F A A S L I S K A I K N V . . 343
caa20531 (SEQ ID NO: 70) P . P_LE_PK G_ZY_ZG_NA Y I D V Y V E L T V R E . . L E E S . S I S N I A N R V K X A K K T A Y E K 350
caa64636 (SEQ ID NO: 71) P . P_LE_PT G_ZY_ZG_NA F A F P V A V E T A A K . . L S K N . P L G Y A L E L Y K K T K S D V . . 342
caa94432 (SEQ ID NO: 72) I . P_L . G Y Z G N A V V V P A V I T T A A K . . L C G N . P L G Y A V D L I R K A K A . . 334
cab06427 (SEQ ID NO: 73) N P S L E P K G_ZY_ZG_NV V F L A V C T A T V G D . . L S C N . P L T D T A G K V Q E A L K G L . . 344
cab10318 (SEQ ID NO: 74) S . L L Q E S S I G N L M F S S V V . . L S I G R . . G G E V K I E E A V R D L R K K E E L . . 328
cab10319 (SEQ ID NO: 75) S . S V A P K D V I G N L Q S G F S . . L K K D A . . E S E E I P E I V A T F R X N K E R V . . 321
cab40761 (SEQ ID NO: 76) T . P_LP E G G S G N A Y V V L A S V A S T A R E . . L L E E L T L E S I V N K I R E A K K S I . . 362

FIG. 6K

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TAX1 (SEQ ID NO: 28) . . . NDNF. KSRAVVKPKSELDVN. MNHENVVAFADWSRL 367
TAX2 (SEQ ID NO: 26) . . . NENE. KSERILTKPKSTLDAN. MKHENVVGGCDWKRNL 361
aab61522 (SEQ ID NO: 61) . . . DAVYVKKLQEDNRGHL. EFLNKQASGEVNGEIVVSESEFTSLCKF 259
aab61523 (SEQ ID NO: 62) . . . S. . . LNCKEMSKSSSRIFFELLEIG. KVYGRG. . . NEMDLWMSNEWCKL 366
aab95293 (SEQ ID NO: 63) . . . ADQLNQSVAAHQDGRIIRSVADEANPRCFPLGNADGASVTMGSSESPRF 416
aab97723 (SEQ ID NO: 64) . . . SEDYLRSMVVDVVKRPKR. LEFGGKLITITQWTTRF 393
aac17079 (SEQ ID NO: 65) . . . SVTKEHFLNLIDWVETCRPTPAVSRIYSVGSSDDGPAFVVSSGRSF 500
aac18062 (SEQ ID NO: 66) . . . CGEIISSEVAKVDDAEVSSMVLNNSVREFFYYEWGKGEKVNFLYKF 371
aac27152 (SEQ ID NO: 67) . . . TDEYARSAlDwgELYKG. FPHGEVLVSSWWKL 388
aac99311 (SEQ ID NO: 68) . . . KNLSREKLTYYVAQMEEFVKSLKEEDISNLF. DIDAYLSDSEWCKRF 374
aad12025 (SEQ ID NO: 69) . . . TNEYVMIGIEYLYKNQKDLKKEQDDLHALGSTEGPFYGNPNLGVVSEWLTL 391
caa20531 (SEQ ID NO: 70) GYIEEELKNTERLMRDDSMEE. GVSDGLEFLTDWRN 386
caa64636 (SEQ ID NO: 71) . . . TEEYMKSVADLMVULKGRPH. FTVVVRTELYSDVTRG 376
caa94432 (SEQ ID NO: 72) . . . TMEYVIKSTVDLMVIKGRPY. FTVVVGSEMMSDLTRI 368
cab06427 (SEQ ID NO: 73) . . . DDDYLRSAlDHTESKPGL. PVPYMGSSPEKTLY. . . PNVLVNNEWGRI 386
cab10318 (SEQ ID NO: 74) . . . GTVILDEGGSSSSMWGSKLANMLTNYSRLSYETHEPYTVSSWWCKL 376
cab10319 (SEQ ID NO: 75) . . . NEMIKESLQGNTIGQSSLISLMAETVSES. TEIDRYIMSSWWCKR 363
cab40761 (SEQ ID NO: 76) . . . DOGYINSYMEAUGGSNDGNLPP. LKELTLISDWTKM 397

FIG. 6L

Donald L. Stephens, Jr.
Our Ref. No. 4630-59094/DLS/JOC
Inventors: Croteau et al.
For: TRANSACYLASES OF THE PACLITAXEL
BIOSYNTHETIC PATHWAY
Application No. 09/866,570, filed: May 25, 2001
Mailed: September 20, 2001
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TAX1 (SEQ ID NO: 28) G . F D E V D E G W G N A Y S V S P V Q Q S . . A L A M Q N Y F E L L K P S K N K P D G I K I L M 414
TAX2 (SEQ ID NO: 26) G . F Y E A D E G W G N A Y N V S P M Q Q R E H E L A M Q N Y F E L R S A K N M I D G I K I L M 410
aab61522 (SEQ ID NO: 61) E V Y . E A D E G W G K P L W V A S A R M S . Y K N L . . V A F I D T K E G D G I E A W I 300
aab61523 (SEQ ID NO: 62) G . L Y . D A D E G W G K P Y W V T G R G T S H F K N L . . M L L I D T K D G E G G I E A W I 408
aab95293 (SEQ ID NO: 63) E M Y . D N D E G W G R P Y A V R S G R S N K F D G K I S A . F P G R E G N G T V D L E V 459
aab97723 (SEQ ID NO: 64) E M Y E T A D E G W G K P Y Y A C P I D I R R P T P Q V C V L L P Q G G V E S G N D Q S M V V C L 441
aac17079 (SEQ ID NO: 65) E V N . Q V D E G W G S P Y Y F G S Y H E P W G G S A G Y V M P M P S S V D D R D W M V Y L 544
aac18062 (SEQ ID NO: 66) E L Y . E V D E G W G I P S L V D T T A V P F G L I V L M D E A P A G D G I A V R A 412
aac27152 (SEQ ID NO: 67) G . F A E V E Y P W G K P Y S C P V V Y H R K D I V I L L F P D I D G D S K G V Y V L A 431
aac99311 (SEQ ID NO: 68) E F Y . D V D E G W G K P I W V . C L F Q Q P Y I R N C V V M M D Y P F G D D Y G I E A I V 417
aad12025 (SEQ ID NO: 69) E . M Y G L D E G W G K E F Y T G P G T H D F D G D S L I L P D Q N E D G . S V I L A T 433
caa20531 (SEQ ID NO: 70) G W F G S M D E G W N E P Y N L R P L . T Q R E S T V H V G M I L K P S K S D P S M E G G V K V I M . 435
caa64636 (SEQ ID NO: 71) G . F G E V D E G W G K A Y Y G G P A K G G V G A I P G V A S E Y I P F K . N K K G E N G I V V P I 424
caa94432 (SEQ ID NO: 72) G . V E N V D E G W G K A I F G G P T T T G A R I T R G L V S F C V P F M . N R N G E K G T A L S I 416
cab06427 (SEQ ID NO: 73) E . Y Q A M D E G W G S P T F F G I S N I F Y D G Q C F L I P S R D G D G . S M T L A I 428
cab10318 (SEQ ID NO: 74) E F Y . E A S E G W D S P Y W V V G N V S P V L G N L . A M L I D S K D G Q G I E A F V 418
cab10319 (SEQ ID NO: 75) E F Y . E V D E G E S S E P Y W V G Y A S H T I Y D N M V G V V L I D S K E G D G V E A W I 407
cab40761 (SEQ ID NO: 76) E . F H N V G E G N G G E P A D Y M A P L C P P V P Q V A Y F M K N P K D A K G V I V R I 441

FIG. 6M

439
TAX1 (SEQ ID NO: 28) F ~~L~~ P L S K ~~M~~ K S ~~E~~ K I E M E A M M K . K Y V A K V
TAX2 (SEQ ID NO: 26) F ~~M~~ P A S M V K P ~~E~~ K I E M E V T I N . K Y V A K I C N S K L
aab61522 (SEQ ID NO: 61) N ~~L~~ D Q N D M S R ~~E~~ A D E E L L R Y V S S N P S V M V S V S
aab61523 (SEQ ID NO: 62) T ~~L~~ T E Q ~~M~~ S L F E C D Q E L L E S A S L N P P V L I
aab95293 (SEQ ID NO: 63) V ~~L~~ S P E T M A G G I E S D G E F M R Y V T N K
aab97723 (SEQ ID NO: 64) C ~~L~~ P P T A V H T E T R L L S L N D H K
aac17079 (SEQ ID NO: 65) H ~~L~~ T K G Q L R F I E E A S H V L K P I D N D Y L K I
aac18062 (SEQ ID NO: 66) C ~~L~~ S E H D ~~M~~ T Q E Q Q R H Q O L L S Y V S
aac27152 (SEQ ID NO: 67) A ~~L~~ P S K E M S K E Q H W F E D T L C
aac99311 (SEQ ID NO: 68) S ~~F~~ E Q E K M S A E E K N E Q L L Q F V S N
aac12025 (SEQ ID NO: 69) C ~~L~~ Q V A H M E A E K K H Y E D I
caa20531 (SEQ ID NO: 70) K ~~L~~ P R D A M V E E K R E M A T M K K L Y F G D T N
caa64636 (SEQ ID NO: 71) C ~~L~~ P G F A M E T E V K E L D G M L K V D A P L . . V N S N Y A I I R P A L .
caa94432 (SEQ ID NO: 72) C ~~L~~ P P P A M E R E R A N V H A S L Q V K Q V V D A V D S H M Q T I Q S A S K .
cab06427 (SEQ ID NO: 73) N ~~L~~ F S S H L S R E K K Y F Y D F
cab10318 (SEQ ID NO: 74) T ~~L~~ P E N M S S Z E Q N P E L L A F A T M N P S V L V
cab10319 (SEQ ID NO: 75) S ~~L~~ P E E D M S V E V D D Q E L L A Y A V L N P P V V A
cab40761 (SEQ ID NO: 76) G ~~L~~ D P R D V N G E S N H E L D C

FIG. 6N

Donald L. Stephens, Jr.
Our Ref. No. 4630-59094/DLS/JOC
Inventors: Croteau et al.
For: TRANSACYLASES OF THE PACLITAXEL
BIOSYNTHETIC PATHWAY
Application No. 09/866,570, filed: May 25, 2001
Mailed: September 20, 2001
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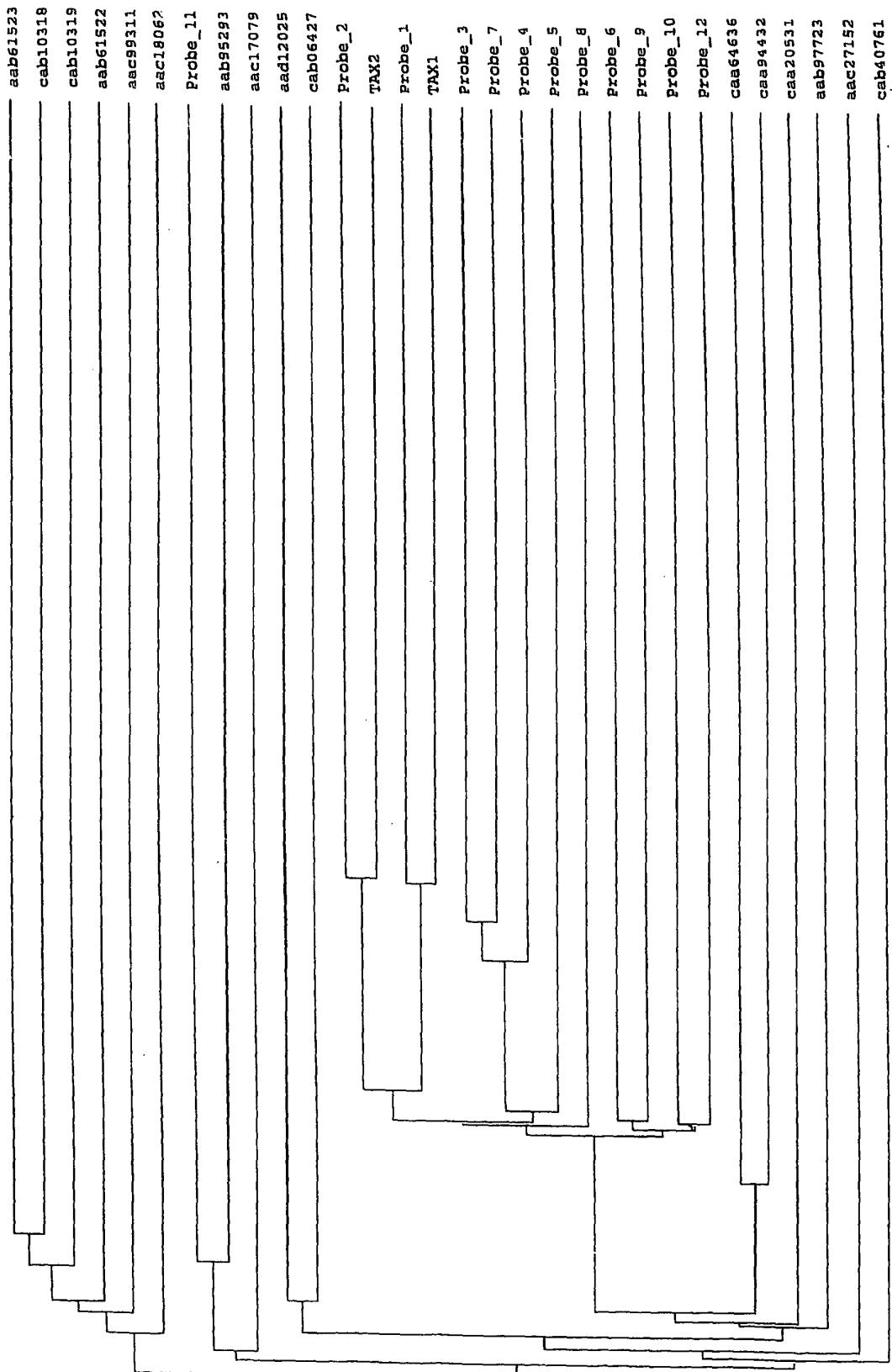


FIG. 7

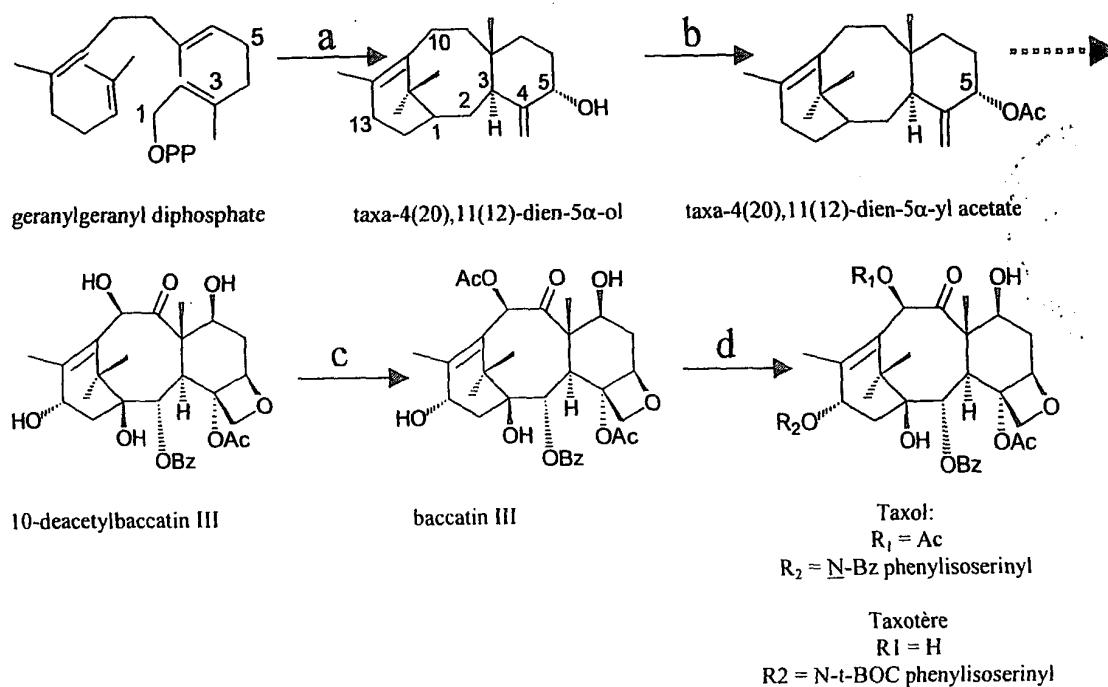


FIG. 8A

09366570 0924024

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Application No. 09/866,570, filed: May 25, 2001
Mailed: September 20, 2001
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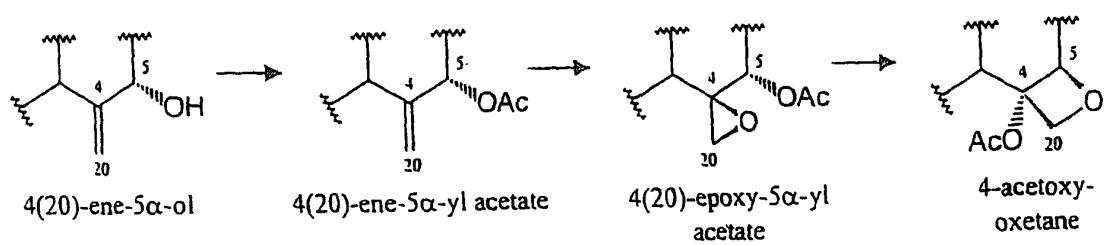


FIG. 8B

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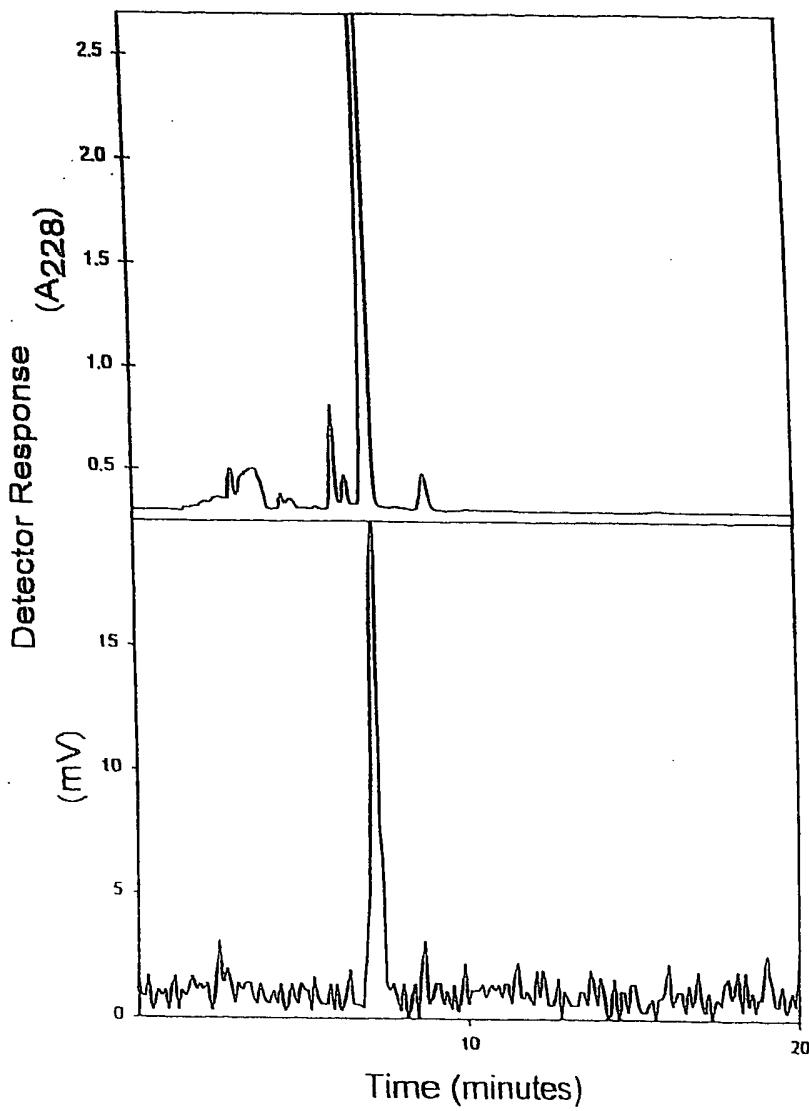


FIG. 9A

FIG. 9B

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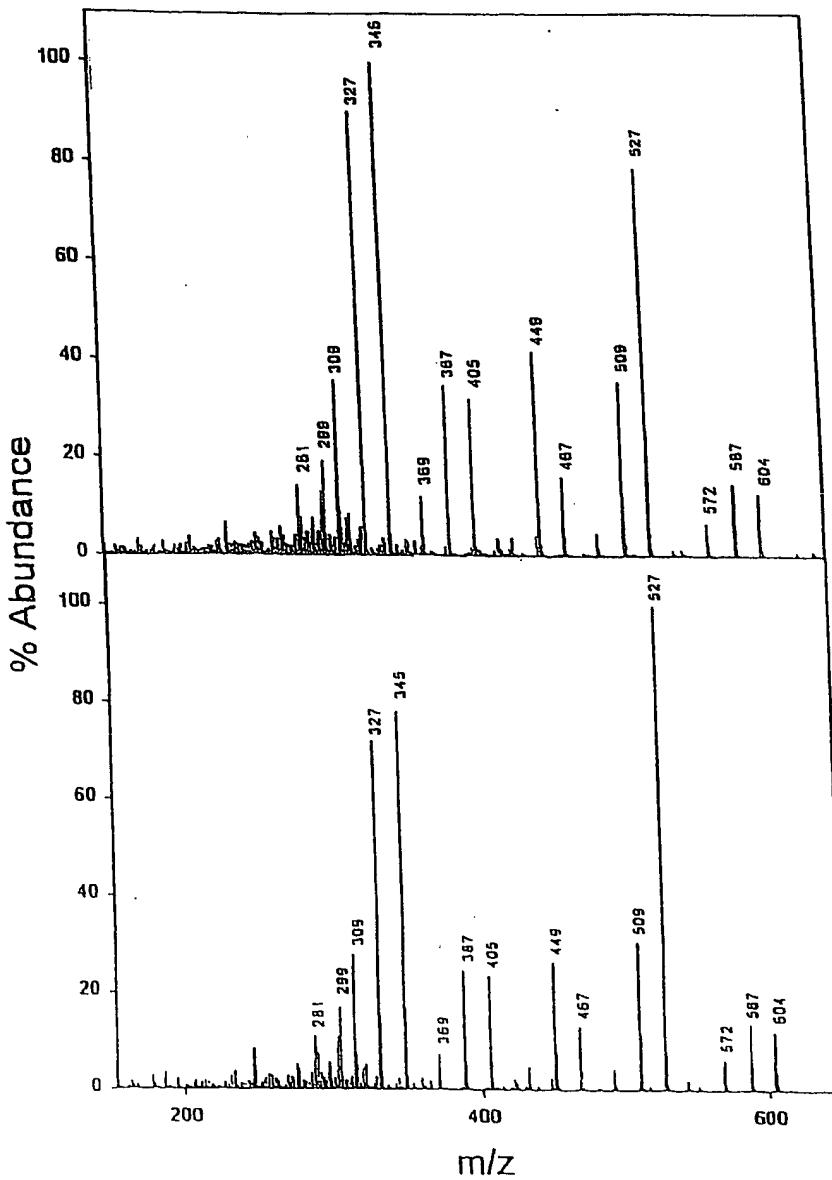


FIG. 10A

FIG. 10B